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**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re Patent Application of: Igor Sinyak et al.  
Title: DATA DISPLAY USING MULTICOLUMN SCROLLING  
Attorney Docket No.: 884.006US2

**PATENT APPLICATION TRANSMITTAL**

**BOX PATENT APPLICATION**  
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We are transmitting herewith the following attached items and information (as indicated with an "X"):

- ☒ **CONTINUATION** of prior Patent Application No. 09/204,006 (under 37 CFR § 1.53(b)) comprising:
- ☒ Specification ( 13 pgs, including claims numbered 1 through 31 and a 1 page Abstract).
  - ☒ Formal Drawing(s) ( 9 sheets).
  - ☒ Combined Declaration and Power of Attorney ( 3 pgs).
  - ☒ Incorporation by Reference: *The entire disclosure of the prior application, from which a copy of the oath or declaration is supplied herewith, is considered as being part of the disclosure of the accompanying application and is hereby incorporated by reference therein.*
  - ☒ Prior application is assigned of record to Intel Corporation.
  - ☒ Preliminary Amendment ( 1 pgs).
  - ☒ Return postcard.

The filing fee (NOT ENCLOSED) will be calculated as follows:

	No. Filed	No. Extra	Rate	Fee
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[ ] MULTIPLE DEPENDENT CLAIMS PRESENTED				\$0.00
BASIC FEE				\$760.00
TOTAL				\$1,426.00

**THE FILING FEE WILL BE PAID UPON RECEIPT OF THE NOTICE TO FILE MISSING PARTS.**

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Date of Deposit: August 9, 1999

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PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Igor Sinyak et al.

Examiner: Unknown

Serial No.: Unknown

Group Art Unit: Unknown

Filed: Herewith

Docket: 884.006US2

Title: DATA DISPLAY USING MULTICOLUMN SCROLLING

PRELIMINARY AMENDMENT

Assistant Commissioner for Patents

Washington, D.C. 20231

Before the above-identified continuation application is taken up for examination, please enter the following amendment.

IN THE SPECIFICATION

On page 1, after the title, please add the following:

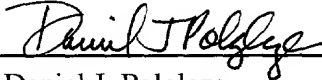
--This application is a Continuation of Application Serial No. 09/204,006, filed December 1, 1998.--

Respectfully submitted,

IGOR SINYAK ET AL.

By their Representatives,

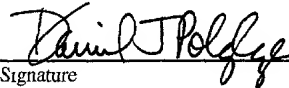
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Signature

Field of the Invention

The present invention relates generally to display of data, and more particularly to displaying scrollable text or data on a computer display.

10

Background of the Invention

The large computer screen displays and high resolution pixel densities that are now in widespread use make it possible to display many more characters per line than was previously possible. For example, a 21" monitor with 1280x1024  
15 resolution can display upwards to 200 or more alphanumeric characters or other discrete language symbols per line using a visually acceptable size font, such as a 10 point font.

While such large screen displays have the capability to display a large number of alphanumeric characters per line, commonly used text-based documents  
20 have a form that is incompatible to a greater or lesser extent with displaying such a large number of characters on a single line. For example, source code rarely goes over 80 characters per line, so it inherently is unable to take advantage of such capacity. Also, the lines of text in printed media, such as newspapers or books, become more difficult or unwieldy to read if too long, such that the reader may be  
25 required to turn his or her head to read a line, and potentially lose track of what line of text they are on when traversing from the end of one line to the beginning of the next. As a result, most documents do not exceed approximately 100 characters per line. Thus, while a single line of text could extend from one side of a 200 character per line display to the other, such a display would not likely be preferred by most  
30 individuals.

5

### Summary of the Invention

In one embodiment, the present invention provides a method for displaying line-formatted materials on a screen display in two or more adjacent columns, wherein lines spill from the bottom of one column to the top of an adjacent column when scrolling therethrough.

10

### Brief Description of the Drawings

Figures 1 and 2 illustrates the display of source code on a screen display using a prior art technique;

Figures 3A, 3B, 4L, 4R, 5L and 5R illustrate the display of source code on a screen display according to one embodiment of the invention, wherein "L" denotes the left column and "R" denotes the right column; and

15

Figure 6 illustrates a computer system including the display capabilities illustrated in Figures 3A, 3B, 4L, 4R, 5L and 5R according to one embodiment of the invention.

20

### Detailed Description of the Invention

In the following detailed description of the invention, reference is made to the accompanying drawings which form a part thereof, and in which is shown, by way of illustration, specific embodiments in which the invention may be practiced.

In the drawings, like numerals describe substantially similar components throughout the several views. These embodiments are described in sufficient detail to enable those skilled in the art to practice the invention. Other embodiments may be utilized and structural, logical, and electrical changes may be made without departing from the scope of the present invention. The following detailed description is, therefore, not to be taken in a limiting sense, and the scope of the present invention is defined only by the appended claims, along with the full scope of equivalents to which such claims are entitled.

25

30

Referring now to Figure 1, there is illustrated a prior art technique for displaying source code on a computer display device 10. Display device 10 includes

5 a screen display 12, which may be, for example and without limitation, the display surface of a cathode ray tube, a liquid crystal display or a plasma display device. A display area 14 having border 16 defines a window 18 that is actively controlled by the display driver of a computing device (described below) for the purpose of displaying alphanumeric characters or other symbols in a sequence of descending  
10 lines (or, alternatively, ascending if desired). Window 18 may, for example, be presented on a 21" (or equivalent metric size) size display with 1280x1024 resolution that can display upwards to 200 or more alphanumeric characters or other discrete language symbols per line using a visually acceptable size font, such as a 10 point font. While window 18 is shown with a visible border 16 for the sake of  
15 clarity, it is not necessary that the border 16 be visible. Such a visible border may be present, for example, where the window 18 is created and controlled by a windowing-type based display system, with scroll bar 17a and 17b, such as that used by the Windows 95® operating system available from Microsoft Corporation. Other window may be displayed above, below or on top of window 18, as is  
20 conventional.

In Figure 1, a sequence of source code lines 20 is displayed, beginning with the line "#include "raster.h", identified with the reference number 22, and concluding with the line "GE\_Void\_t", identified with the reference number 24. In this example herein presented Source code 20 generically represents line formatted  
25 materials; thus, the invention is in no way limited to use in displaying source code. Source code 20 is shown in greater detail in Figure 2. It is noted that less than approximately one-half ( $\frac{1}{2}$ ) the width of window 18 is filled with source code 20. In this mode of display, in order to read the line above line 22, the source code needs to be scrolled down, such that line 22 moves to a line below its position in  
30 Figure 1, and line 24 is pushed off of the display altogether. This is conventional scrolling operation. Scrolling may be accomplished by moving a cursor in the direction of the next line "above" or "below" the display area 14, by use of the scroll bar 17a on the side of the window 18, or by any other means.

5 Referring now to Figures 3A and 3B, there is illustrated a system for displaying and scrolling line-formatted materials according to one embodiment of the invention. As used herein, the term "line-formatted materials" means any information which is organized as a sequence of lines to be displayed in a descending (or ascending) sequence on a screen display, wherein at least some of  
10 the lines are made up at least in part by discrete symbols, such as, but not limited to, alphanumeric characters or graphic icons or pictures. Furthermore, line-formatted materials may be displayed in conjunction with graphic elements that precede or follow the materials, or are displayed side by side therewith. For example, displayed text may wrap around a graphic element.

15 As illustrated in Figure 3A, the sequence of source code 20 is displayed in two columns 30 and 32 within window 18' in the same display 12, which is the same size as it was shown in Figure 1. Window 18' is approximately  $\frac{1}{2}$  the height of window 18, and includes a visible center dividing line 28 that visually separates each column 30 and 32. However, line 28 may be omitted if desired. Line 22 of the  
20 source code is displayed at the top of column 30, in the first or "starting" line of the display area 14. Line 26, now at the bottom of column 32, is the last or "ending" line of the display area 14. As illustrated, only about one-half ( $\frac{1}{2}$ ) as many lines of the display 12 are needed to display the same number of lines of code as were required in the prior art display technique of Figure 1. The source code shown in  
25 columns 30 and 32 in Figure 3A is shown in greater detail in Figures 4L and 4R, respectively, wherein "L" denotes the left column and "R" denotes the right column.

Figure 3B illustrates the effect of scrolling the source code illustrated in Figure 3A. By scrolling the source code 20 "down," line 22 and the four lines below it are moved off the top of the display area of column 30, five lines from the  
30 top of column 32 are moved to the bottom of column 30, and five new lines are added to the display area 14 at the bottom of column 32. Scrolling the source code 20 "up" produces the opposite effect. Thus, the line 36 at the top of column 32 is always the next sequential line following line 34 at the bottom of column 30. This operation can be defined as spilling lines from the bottom of column 30 to the top of

5 column 32. The source code shown in columns 30 and 32 in Figure 3B is shown in greater detail in Figures 5L and 5R, respectively.

Although the embodiment of Figures 3A and 3B is illustrated with two columns, the invention is no way limited in this respect. Three or more columns may be provided, side by side, with lines spilling from the bottom of the left-most  
10 column spilling to the top of the next column over, and so on from the bottom of this column to the top of the next, as the line-formatted material is scrolled. Line-formatted material is thus scrolled through the display area that begins with the starting line at the top end of the left-most column, and ends with the ending line at the bottom end of the right-most column. Of course, the starting and ending lines of  
15 the display can be defined differently, provided that these lines start and end at diagonally opposite ends of the display area 14.

Moreover, although the embodiment of Figures 3A and 3B illustrates the display of source code, the invention is equally applicable to the display of any line-formatted materials, as defined above. To reiterate, such line-base materials include,  
20 for example, printed materials as may be found in books, magazines or web sites.

In respect of line-formatted materials found on the web, one example embodiment of the invention includes the provision of an internet scripting language, such as hyper-text mark-up language (HTML) or XML, formatting that is interpreted by a web browser (such as Netscape's Navigator® browser) to display  
25 line-formatted web content in the manner illustrated with respect to Figures 3A and 3B. Thus, line-formatted web content is encoded with Scripting language codes that cause the browser to display content in scrollable multiple columns with line spill from one column to the next. Such a Scripting language encoded document 57 is illustrated in Figure 6. Alternatively, in another embodiment a web browser 55  
30 includes the capability to display line-formatted web content in line spilling, scrollable columns without any special Scripting language encoding in the content.

Referring now to Figure 6, there is illustrated a simplified block diagram of a computer system 40. Computer system 40 includes a processing unit 42, and a system bus 44 connecting the processing unit 42 to system memory or disk drive

5 storage 46 and a video adapter 48 that in turn is connected to display device 10. Storage 46 includes, for example, a ROM BIOS 50, operating system 52, application and other programs 54, data 56, a web browser 55, and an HTML document 57. A user input device 58, such as a mouse, keyboard or microphone for voice activation, provides a scrolling control signal to the system through port  
10 interface 59. A remote computing device 60 is also connected to bus 44 through a network interface 62. In one embodiment, the display methodology illustrated with respect to Figures 3A and 3B is implemented under software control, with the necessary software being either included in the ROM BIOS 50, operating system 52, application and other programs 54, such as a line editor or web browser, or in any  
15 combination thereof. Where the control is provided in software, the software may be encoded in any carrier medium such as but not limited to RAM, magnetic or optical storage media, or in electronic signal transmissions in, for example, a computer system or network. Alternatively, such control may be provided in under hardware control, or a combination of hardware and software control. In either case,  
20 line-formatted materials obtained from the storage 46 (which may be, for example and without limitation, RAM, hard disk, flexible or floppy disk, optical disk) or the remote computing device 60, or another source, are displayed in a scrollable, multicolumn, line-spilling mode under the control of a scrolling control signal received from a user.

25 Thus, the above-described embodiments of the invention provide for a more efficient and user-friendly manner of displaying line-formatted materials on large capacity displays. Embodiments of the invention take the form, for example, of a software product, such as an operating system, video display drive, or web browser, or the form of a computer system including a computer and display device  
30 programmed or configured with hardware to provide the scrolling mode of display of line-formatted materials as described above. An embodiment of the invention also takes the form of Scripting language codes that can be encoded into Scripting language encoded materials to direct a suitably programmed web browser to display the encoded materials as describe with respect to Figures 3A and 3B.



5           Although specific embodiments have been illustrated and described herein, it  
will be appreciated by those of ordinary skill in the art that any arrangement which  
is calculated to achieve the same purpose may be substituted for the specific  
embodiment shown. This application is intended to cover any adaptations or  
variations of the present invention. Therefore, it is manifestly intended that this  
10   invention be limited only by the claims and the equivalents thereof.

093716-08099  
666080-972260

What is claimed is:

1. A method comprising displaying line-formatted materials on a screen display in two or more adjacent columns, wherein lines spill from the bottom of one column to the top of an adjacent column when scrolling through the line-formatted materials.
2. A method according to claim 1 wherein the screen display is at least in part under the control of a computing device with one or more keyboard keys, and at least one mode of scrolling through the line-formatted materials is accomplished under control of a single key.
3. A method according to claim 1 wherein the screen display is at least in part under the control of a computing device with a mouse input device, and at least one mode of scrolling through the line-formatted materials is accomplished under control of the mouse input device.
4. A method according to claim 1 wherein the screen display is at least in part under the control of a computing device with a microphone, and at least one mode of scrolling through the line-formatted materials is accomplished under control of a single voice command spoken to the microphone.
5. A method according to claim 1 wherein the columns form a display area for display of contiguous lines of the line-formatted materials, and wherein diagonally opposite ends of the rightmost and leftmost columns define the starting and ending lines of the display area, such that when scrolling through line-formatted materials the lines flow into and out of the display area at the starting and ending lines.

6. A method comprising displaying Scripting language encoded line-formatted materials under the control of a web browser such that the line-formatted materials are displayed under control of the web browser in two or more adjacent columns of a screen display, wherein lines spill from the bottom of one column to the top of an adjacent column when scrolling through the line-formatted materials.
7. A method according to claim 6 wherein the Scripting language encoded line-formatted materials include Scripting language codes that instruct the browser to spill lines when scrolling.
8. A method according to claim 6 wherein the browser accomplishes the spilling of lines from one column to the other without instruction from Scripting language codes specifying such operation.
9. A method according to claim 1 wherein the line-formatted materials are source code.
10. A method according to claim 6 wherein the line-formatted materials are human readable text.
11. A method comprising encoding line-formatted materials to be displayed using a web browser with one or more Scripting language codes that specify to the web browser that the line-formatted materials are to be displayed in two or more adjacent columns, wherein lines spill from the bottom of one column to the top of an adjacent column when scrolling through the line-formatted materials.
12. A machine readable document encoded in a carrier medium, wherein the document includes line-formatted materials and the materials are encoded with one or more Scripting language codes that specify to a web browser that the line-formatted materials are to be displayed in two or more adjacent columns, wherein

lines spill from the bottom of one column to the top of an adjacent column when scrolling through the line-formatted materials.

13. A program product comprising a computer program encoded in a carrier medium, the program code operative on a suitably configured computer to display line-formatted materials on a screen display in two or more adjacent columns, wherein lines spill from the bottom of one column to the top of an adjacent column when scrolling through the line-formatted materials.

14. A product according to claim 13 wherein the program code is operative on the computer to scroll through the line-formatted materials under control of a single key providing input to the computer.

15. A product according to claim 13 wherein the program code is operative on the computer to scroll through the line-formatted materials under control of a mouse device providing input to the computer.

16. A product according to claim 13 wherein the program code is operative on the computer to scroll through the line-formatted materials under control of a voice command input to the computer.

17. A product according to claim 13 wherein the columns form a display area for display of contiguous lines of the line-formatted materials, and wherein diagonally opposite ends of the rightmost and leftmost columns define the starting and ending lines of the display area, such that when scrolling through line-formatted materials the lines flow into and out of the display area at the starting and ending lines.

18. A program product comprising a computer program encoded in a carrier medium, the program code operative on a suitably configured computer to display Scripting language encoded line-formatted materials such that the line-formatted

materials are displayed in two or more adjacent columns of a screen display, wherein lines spill from the bottom of one column to the top of an adjacent column when scrolling through the line-formatted materials.

19. A product according to claim 18 wherein the Scripting language encoded line-formatted materials include Scripting language codes that instruct the computer program to spill lines from column to column when scrolling.

20. A product according to claim 19 wherein the program accomplishes the spilling of lines from one column to the other without instruction from Scripting language codes specifying such operation.

21. A product according to claim 20 wherein the line-formatted materials are source code.

22. A product according to claim 20 wherein the line-formatted materials are human readable text.

23. A program product comprising line-based materials encoded in a carrier medium, line-formatted materials to be displayed using a web browser and encoded with one or more Scripting language codes that specify to a web browser that the line-formatted materials are to be displayed in two or more adjacent columns, wherein lines spill from the bottom of one column to the top of an adjacent column when scrolling through the line-formatted materials.

24. A machine readable document encoded in a carrier medium, wherein the document includes line-formatted materials and the materials are encoded with one or more Scripting language codes that specify to a web browser that the line-formatted materials are to be displayed in two or more adjacent columns, wherein lines spill from the bottom of one column to the top of an adjacent column when

scrolling through the line-formatted materials.

25. A system comprising a computer programmed to display line-formatted materials on a computer screen display in two or more adjacent columns, wherein lines spill from the bottom of one column to the top of an adjacent column when scrolling through the line-formatted materials.

26. A method according to claim 1 further wherein the line-formatted materials are displayed in conjunction with graphical elements.

27. A method according to claim 11 further wherein the line-formatted materials are displayed in conjunction with graphical elements.

28. A method according to claim 12 further wherein the line-formatted materials are displayed in conjunction with graphical elements.

29. A method according to claim 13 further wherein the line-formatted materials are displayed in conjunction with graphical elements.

30. A method according to claim 18 further wherein the line-formatted materials are displayed in conjunction with graphical elements.

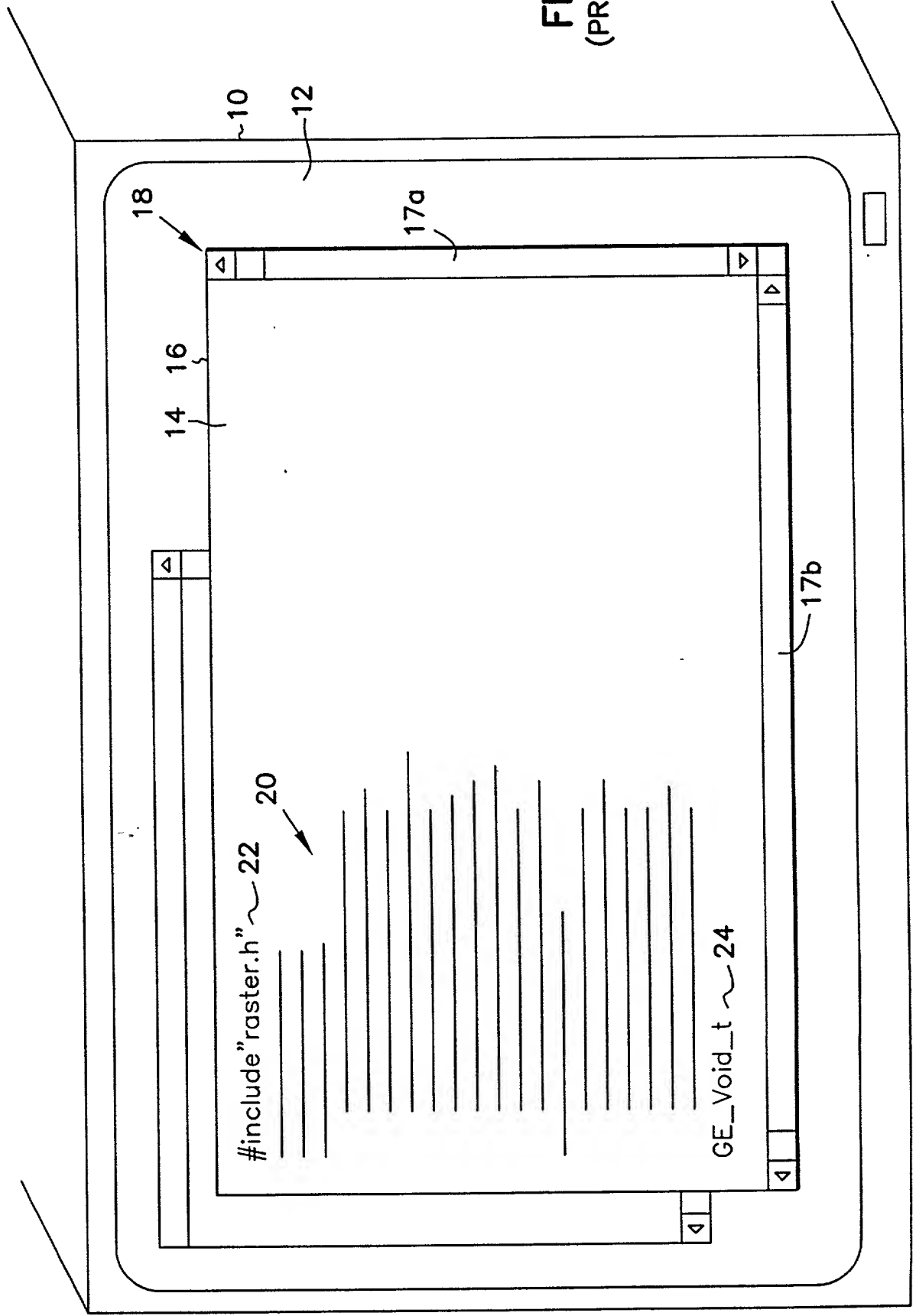
31. A system according to claim 25 further wherein the line-formatted materials are displayed in conjunction with graphical elements.

Abstract of the Disclosure

- 5 Apparatus, software and method for displaying line-formatted materials in multiple columns of a screen display and providing for scrolling through the materials such that lines spill from one column to another, are disclosed. The columns form a display area for display of contiguous lines of the line-formatted materials, wherein diagonally opposite ends of the rightmost and leftmost columns
- 10 define the starting and ending lines of the display area, such that when scrolling through line-formatted materials the lines flow into and out of the display area at the starting and ending lines. In another embodiment, Scripting language encoded line-formatted materials are displayed under the control of a web browser using the scrollable columns. In another embodiment, line-formatted materials are encoded
- 15 with one or more Scripting language codes that specify to a web browser that the line-formatted materials are to be displayed in scrollable columns.

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Washington, D.C. 20231  
Printed Name Daniel J. Polg/azc  
Signature Daniel J. Polg



**FIG. 1**  
**(PRIOR ART)**



```

# include "raster.h" _ 22
# include "clip.h"
# include "xform.h"
# include <assert.h>
GE_Void_t
ge_ClipInit ( GE_Context_t* GEContext )
{
    GE_ClipEquation_t default_equation = {0, 0, 0, 0};
    GE_Dword_t i;
    for (i = 0; i < GE_MAX_CLIP_PLANES; i++) {
        GEContext->Clip_EyeEq (i) = default_equation;
        GEContext->Clip.PlaneDefault (i) = 1;
        GEContext->Clip.PlaneOn (i) = -1;
    }
    GEContext->Clip.NPlanes = 0;
    GEContext->Clip.PlaneOnFlag = 0;
} /* ge_ClipInit */
GE_Void_t
ge_ClipValidate ( GE_Context_t* GEContext )
    GE_FuncTable_t* table = GEContext->currentTable;
    if ( ( GEContext->StateType & GE_CLIPPING) &&
        ( GEContext->Clip.NPlanes != 0 ) ) {
        GEContext->geClipCodeUser = table->ClipFn [GE_FN_CLIP_USER];
        GEContext->geClipPlaneToObject = table->ClipFn [GE_FN_CLIP_EYE_TO_OBJ];

        GEContext->geClipCodeUser = table->ClipFn [GE_FN_CLIP_DEFAULT];
        GEContext->ClipPlaneToObject = table->ClipFn [GE_FN_CLIP_DEFAULT];

        if ( GEContext->StateType & GE_CLIP_VOLUME) {
            GEContext->geClipCodeView = table->ClipFn [GE_FN_CLIP_VIEW];

            GEContext->geClipCodeView = table->ClipFn [GE_FN_CLIP_DEFAULT];
        }
    }
} GE_Void_t

```

FIG. 2 (PRIOR ART)

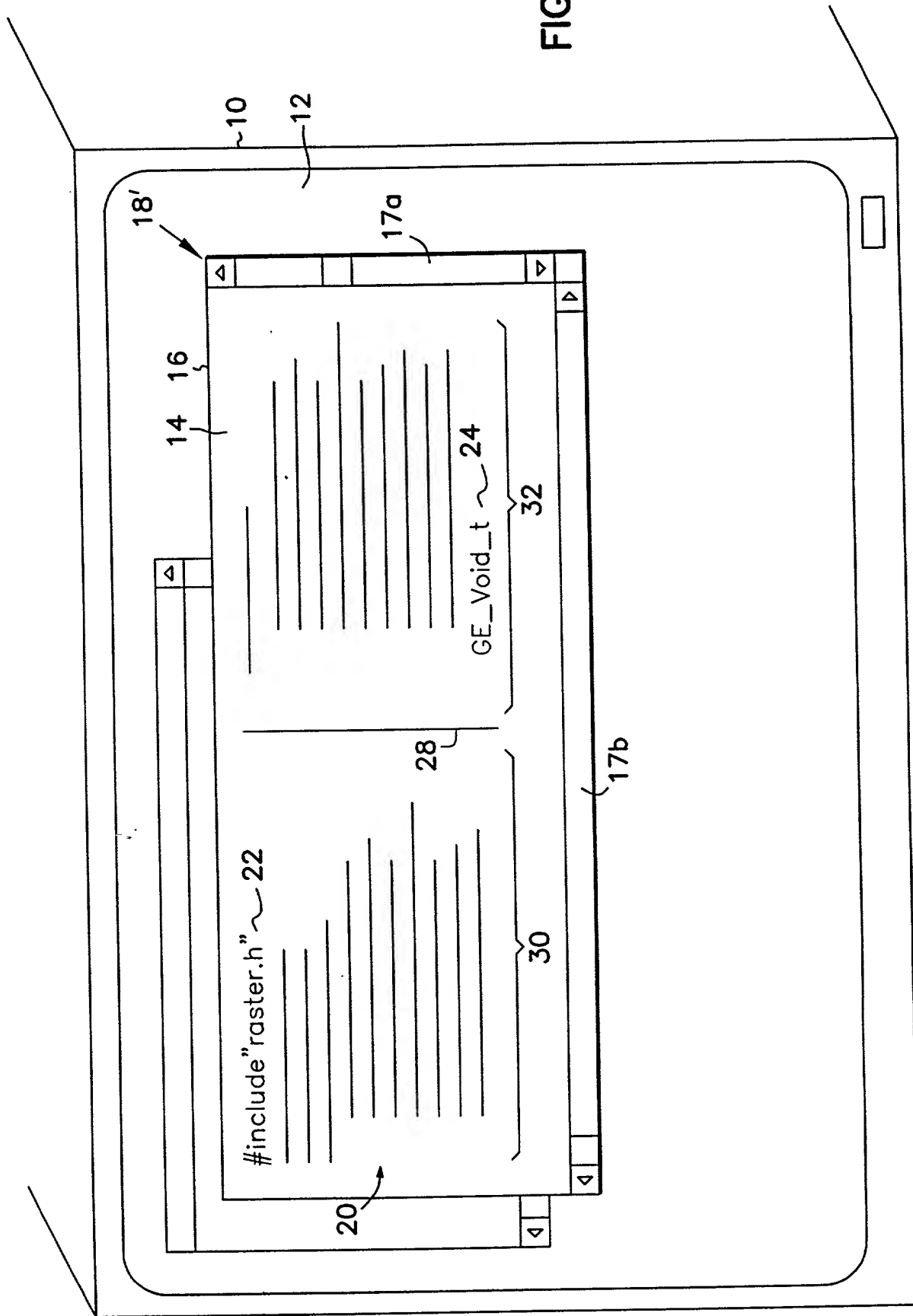


FIG. 3A

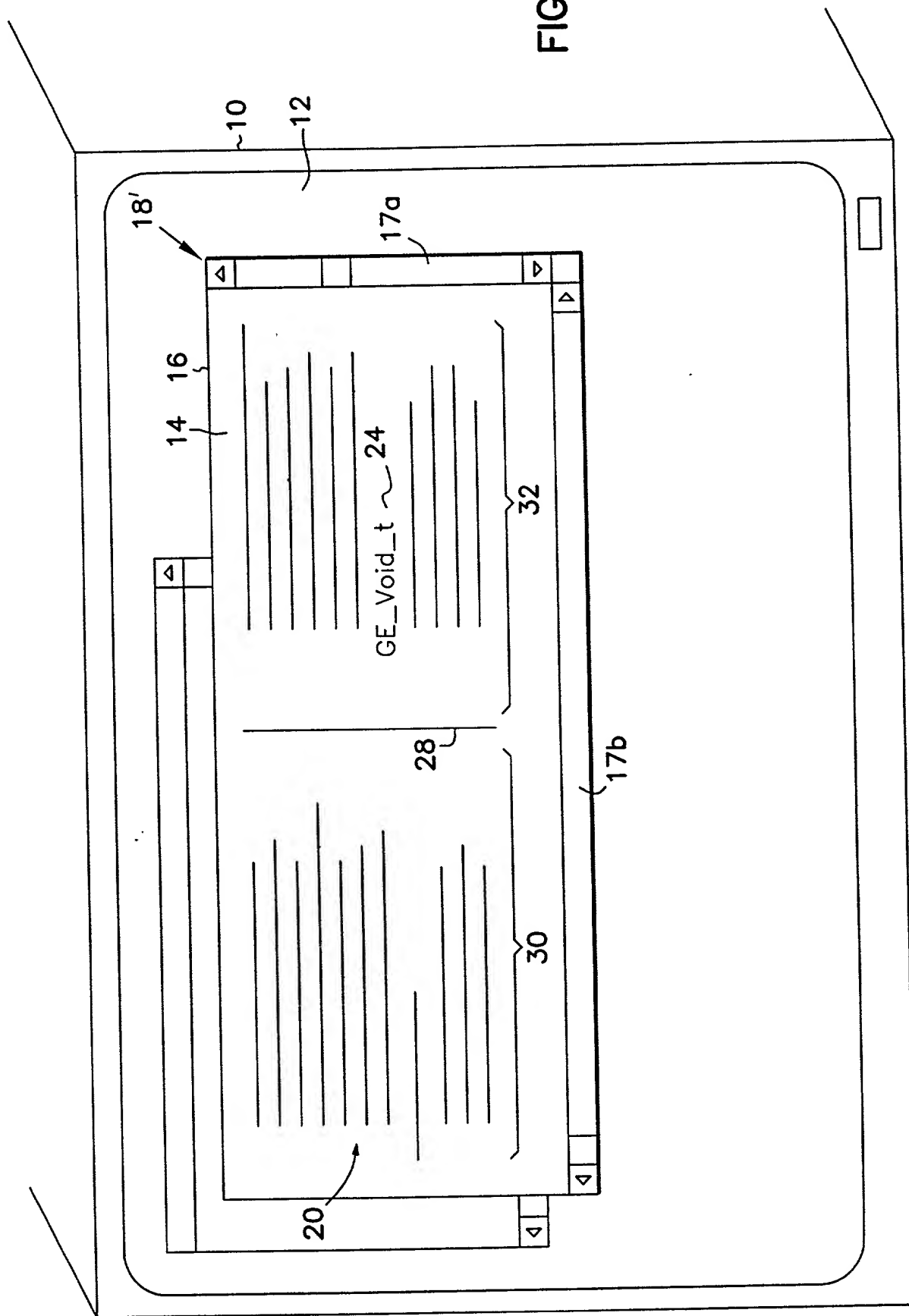


FIG. 3B

22

```

#include "raster.h"
#include "clip.h"
#include "xform.h"
#include <assert.h>

GE_Void_t
ge_ClipInit ( GE_Context_t* GEContext )
{
    GE_ClipEquation_t default_equation = { 0, 0, 0, 0 };
    GE_Dword_t i;

    for (i=0; i<GE_MAX_CLIP_PLANES; i++) {
        GEContext->Clip.EyeEq[i] = default_equation;
        GEContext->Clip.PlaneDefault[i] = 1;
        GEContext->Clip.PlaneOn [i] = -1
    }

    GEContext->Clip.NPlanes = 0;
    GEContext->Clip.PlaneOnFlag = 0;

} /* ge_ClipInit */

```

FIG 4L

```

GE_Void_t
ge_ClipValidate ( GE_Context_t* GEContext )
{
    GE_FuncTable_t* table = GEContext->currentTable;
    if ( ( GEContext->StateType & GE_CLIPPING ) &&
        ( GEContext->Clip.NPlanes 1 = 0 ) ) {
        GEContext->geClipCodeUser = table->ClipFn[GE_FN_CLIP_USER];
        GEContext->geClipPlaneToObject = table->ClipFn[GE_FN_CLIP_EYE_TO_OBJ];

    } else {
        GEContext->geClipCodeUser = table->ClipFn[GE_FN_CLIP_DEFAULT];
        GEContext->geClipPlaneToObject = table->ClipFn[GE_FN_CLIP_DEFAULT];

    }
    if (GEContext->StateType & GE_CLIP_VOLUME) {
        GEContext->geClipCodeView = table->ClipFn[GE_FN_CLIP_VIEW];
    } else {
        GEContext->geClipCodeView = table->ClipFn[GE_FN_CLIP_DEFAULT];
    }
}
GE_Void_t

```

FIG. 4R

```

GE_Void_t
ge_ClipInit ( GE_Context_t* GEContext )
{
    GE_ClipEquation_t default_equation = {0, 0, 0, 0};
    GE_Dword_t i;

    for {i = 0; i < GE_MAX_CLIP_PLANES; i++} {
        GEContext->Clip.EyeEq[i] = default_equation;
        GEContext->Clip.PlaneDefault[i] = 1;
        GEContext->Clip.PlaneOn[i] = -1;
    }

    GEContext->Clip.NPlanes = 0;
    GEContext->Clip.PlaneOnFlag = 0;

} /* ge_ClipInit */

GE_Void_t
ge_ClipValidate ( GE_Context_t* GEContext )
{
    GE_FuncTable_t* table = GEContext->currentTable;

```

FIG. 5L

```

if ( ( GEContext->StateType & GE_CLIPPING ) &&
      ( GEContext->Clip.NPlanes 1 = 0 ) ) {
    GEContext->geClipCodeUser = table->ClipFn [GE_FN_CLIP_USER];
    GEContext->geClipPlaneToObject = table->ClipFn[GE_FN_CLIP_EYE_TO_OBJ];

} else {
    GEContext->geClipCodeUser = table->ClipFn[GE_FN_CLIP_DEFAULT];
    GEContext->geClipPlaneToObject = table->ClipFn [GE_FN_CLIP_DEFAULT];
}
if (GEContext->StateType & GE_CLIP_VOLUME) {
    GEContext->geClipCodeView = table->ClipFn[GE_FN_CLIP_VIEW];
} else {
    GEContext->geClipCodeView = table->ClipFn [GE_FN_CLIP_DEFAULT];
}
GE_Void_t 24
ge_ClipEnable ( GE_Context_t* GEContext, GE_Dword_t plane )
{
    if ( GEContext->Clip.PlaneOnflag & (1 << plane) ) {
        /* Plane already on */
    }
}

```

FIG. 5R

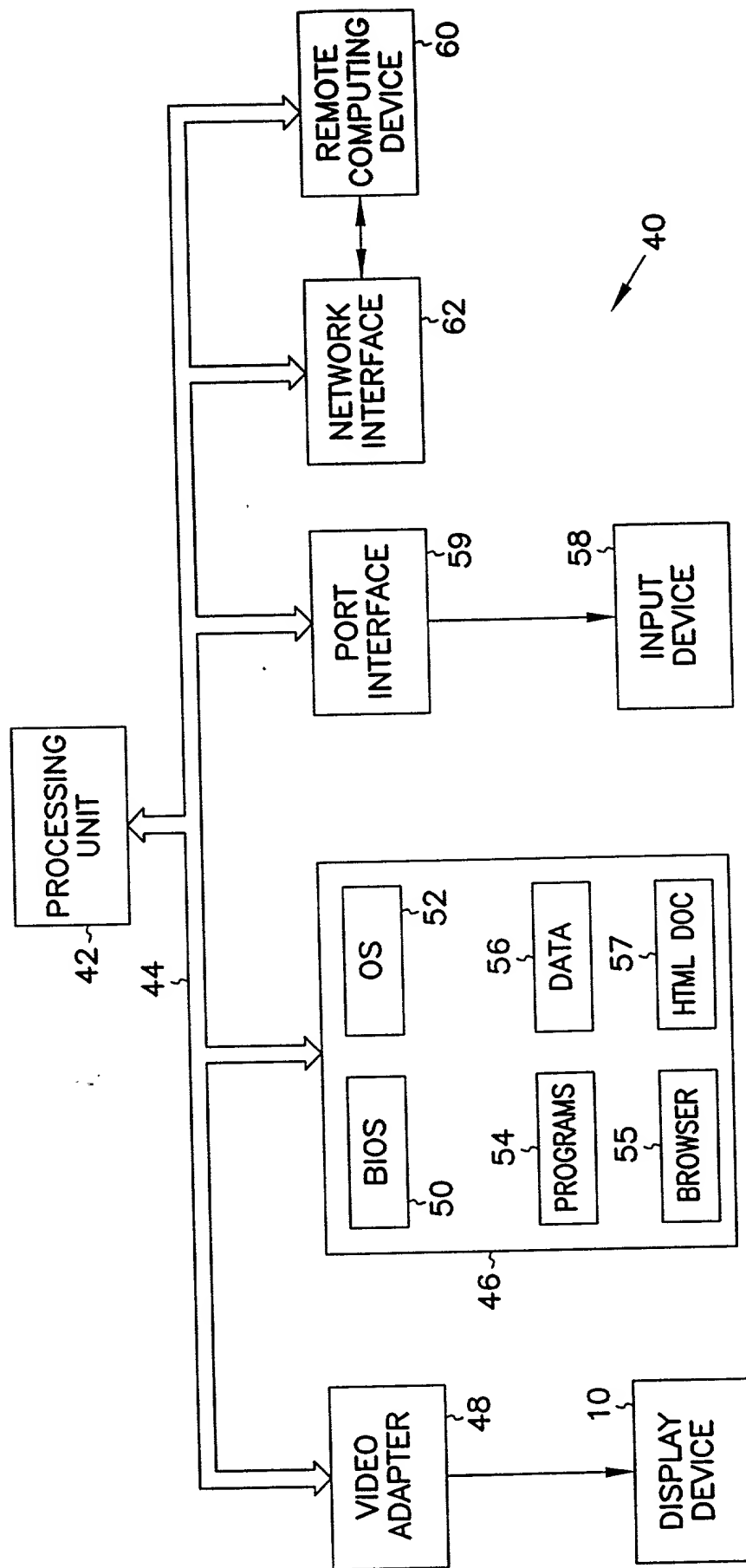


FIG. 6



# United States Patent Application

## COMBINED DECLARATION AND POWER OF ATTORNEY

As a below named inventor I hereby declare that: my residence, post office address and citizenship are as stated below next to my name; that

I verily believe I am the original, first and joint inventor of the subject matter which is claimed and for which a patent is sought on the invention entitled: DATA DISPLAY USING MULTICOLUMN SCROLLING.

The specification of which is attached hereto.

I hereby state that I have reviewed and understand the contents of the above-identified specification, including the claims, as amended by any amendment referred to above.

I acknowledge the duty to disclose information which is material to the patentability of this application in accordance with Title 37, Code of Federal Regulations, § 1.56 (see page 3 attached hereto).

I hereby claim foreign priority benefits under Title 35, United States Code, § 119/365 of any foreign application(s) for patent or inventor's certificate listed below and have also identified below any foreign application for patent or inventor's certificate having a filing date before that of the application on the basis of which priority is claimed:

No such applications have been filed.

I hereby claim the benefit under 35 U.S.C. § 119(e) of any United States provisional application(s) listed below.

No such applications have been filed.

I hereby claim the benefit under Title 35, United States Code, § 120/365 of any United States and PCT international application(s) listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States application in the manner provided by the first paragraph of Title 35, United States Code, § 112, I acknowledge the duty to disclose material information as defined in Title 37, Code of Federal Regulations, § 1.56(a) which occurred between the filing date of the prior application and the national or PCT international filing date of this application.

No such applications have been filed.

I hereby appoint the following attorney(s) and/or patent agent(s) to prosecute this application and to transact all business in the Patent and Trademark Office connected herewith:

Anglin, J. Michael	Reg. No. 24,916	Fogg, David N.	Reg. No. 35,138	Litman, Mark A.	Reg. No. 26,390
Arora, Suneel	Reg. No. 42,267	Forrest, Bradley A.	Reg. No. 30,837	Lundberg, Steven W.	Reg. No. 30,568
Bernkopf, Paul A.	Reg. No. 41,615	Hale, Jeffrey D.	Reg. No. 40,012	Mates, Robert E.	Reg. No. 35,271
Bianchi, Timothy E.	Reg. No. 39,610	Harris, Robert J.	Reg. No. 37,346	McCrackin, Ann M.	Reg. No. 42,858
Billion, Richard E.	Reg. No. 32,836	Holloway, Sheryl S.	Reg. No. 37,850	Padys, Danny J.	Reg. No. 35,635
Black, David W.	Reg. No. 42,331	Huebsch, Joseph C.	Reg. No. 42,673	Polglaze, Daniel J.	Reg. No. 39,801
Brennan, Thomas F.	Reg. No. 35,075	Kalis, Janal M.	Reg. No. 37,650	Schwegman, Micheal L.	Reg. No. 25,816
Brooks, Edward J., III	Reg. No. 40,925	Klima-Silberg, Catherine I.	Reg. No. 40,052	Sieffert, Kent J.	Reg. No. 41,312
Clark, Barbara J.	Reg. No. 38,107	Kluth, Daniel J.	Reg. No. 32,146	Slifer, Russell D.	Reg. No. 39,838
Drake, Eduardo E.	Reg. No. 40,594	Lacy, Rodney L.	Reg. No. 41,136	Terry, Kathleen R.	Reg. No. 31,884
Dryja, Michael A.	Reg. No. 39,662	Leffert, Thomas W.	Reg. No. 40,697	Viksnins, Ann S.	Reg. No. 37,748
Embretson, Janet E.	Reg. No. 39,665	Lemaire, Charles A.	Reg. No. 36,198	Woessner, Warren D.	Reg. No. 30,440

I hereby authorize them to act and rely on instructions from and communicate directly with the person/assignee/attorney/firm/organization/who/which first sends/sent this case to them and by whom/which I hereby declare that I have consented after full disclosure to be represented unless/until I instruct Schwegman, Lundberg, Woessner & Kluth, P.A. to the contrary.

Please direct all correspondence in this case to Schwegman, Lundberg, Woessner & Kluth, P.A. at the address indicated below:

P.O. Box 2938, Minneapolis, MN 55402

Telephone No. (612)373-6900

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

Full Name of joint inventor number 1 : **Igor Sinyak**  
Citizenship: **United States of America** Residence: **Mountain View, CA**  
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**Mountain View, CA 94043**

Signature: Igor Sinyak Date: 11/2/98  
Igor Sinyak

Full Name of joint inventor number 2 : **David L. Sprague**  
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**Palo Alto, CA 94306**

Signature: David L. Sprague Date: \_\_\_\_\_  
David L. Sprague

Full Name of inventor: \_\_\_\_\_  
Citizenship: \_\_\_\_\_ Residence: \_\_\_\_\_  
Post Office Address: \_\_\_\_\_

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Full Name of inventor: \_\_\_\_\_  
Citizenship: \_\_\_\_\_ Residence: \_\_\_\_\_  
Post Office Address: \_\_\_\_\_

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

§ 1.56 Duty to disclose information material to patentability.

(a) A patent by its very nature is affected with a public interest. The public interest is best served, and the most effective patent examination occurs when, at the time an application is being examined, the Office is aware of and evaluates the teachings of all information material to patentability. Each individual associated with the filing and prosecution of a patent application has a duty of candor and good faith in dealing with the Office, which includes a duty to disclose to the Office all information known to that individual to be material to patentability as defined in this section. The duty to disclose information exists with respect to each pending claim until the claim is canceled or withdrawn from consideration, or the application becomes abandoned. Information material to the patentability of a claim that is canceled or withdrawn from consideration need not be submitted if the information is not material to the patentability of any claim remaining under consideration in the application. There is no duty to submit information which is not material to the patentability of any existing claim. The duty to disclose all information known to be material to patentability is deemed to be satisfied if all information known to be material to patentability of any claim issued in a patent was cited by the Office or submitted to the Office in the manner prescribed by §§ 1.97(b)-(d) and 1.98. However, no patent will be granted on an application in connection with which fraud on the Office was practiced or attempted or the duty of disclosure was violated through bad faith or intentional misconduct. The Office encourages applicants to carefully examine:

- (1) prior art cited in search reports of a foreign patent office in a counterpart application, and
- (2) the closest information over which individuals associated with the filing or prosecution of a patent application believe any pending claim patentably defines, to make sure that any material information contained therein is disclosed to the Office.

(b) Under this section, information is material to patentability when it is not cumulative to information already of record or being made of record in the application, and

- (1) It establishes, by itself or in combination with other information, a prima facie case of unpatentability of a claim; or
- (2) It refutes, or is inconsistent with, a position the applicant takes in:
  - (i) Opposing an argument of unpatentability relied on by the Office, or
  - (ii) Asserting an argument of patentability.

A prima facie case of unpatentability is established when the information compels a conclusion that a claim is unpatentable under the preponderance of evidence, burden-of-proof standard, giving each term in the claim its broadest reasonable construction consistent with the specification, and before any consideration is given to evidence which may be submitted in an attempt to establish a contrary conclusion of patentability.

(c) Individuals associated with the filing or prosecution of a patent application within the meaning of this section are:

- (1) Each inventor named in the application;
- (2) Each attorney or agent who prepares or prosecutes the application; and
- (3) Every other person who is substantively involved in the preparation or prosecution of the application and who is associated with the inventor, with the assignee or with anyone to whom there is an obligation to assign the application.

(d) Individuals other than the attorney, agent or inventor may comply with this section by disclosing information to the attorney, agent, or inventor.